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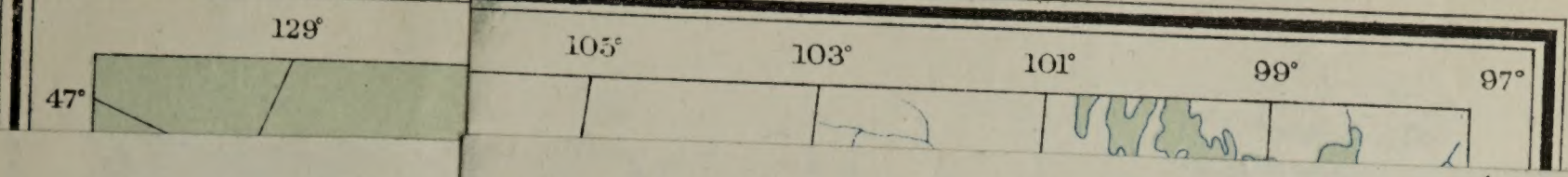
GEOLOGY



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MAP SHOWING LOCATION AND EXTENT OF THE FOREST RESERVES AND NATIONAL PARKS IN WESTERN UNITED STATES 1898

Scale

100 50 25 0 50 100 200 300 Stat Miles.

Forest Reserves — National Parks

FOREST RESERVES

1 OLYMPIC	7 BITTERROOT	13 SAN JACINTO	19 SAN GABRIEL	25 SOUTH PLATTE
2 WASHINGTON	8 TETON	14 PACIFIC	20 SAN BERNARDINO	26 PLUM CREEK
3 MT RAINIER	9 BIGHORN	15 BULL RUN	21 TRABUCO CANYON	27 PIKES PEAK
4 PRIEST RIVER	10 BLACK HILLS	16 CASCADE	22 YELLOWSTONE	28 GRAND CANYON
5 FLAT HEAD	11 UINTA	17 ASHLAND	23 WHITE RIVER	29 PECOS RIVER
6 LEWIS AND CLARKE	12 STANISLAUS	18 SIERRA	24 BATTLEMENT MESA	

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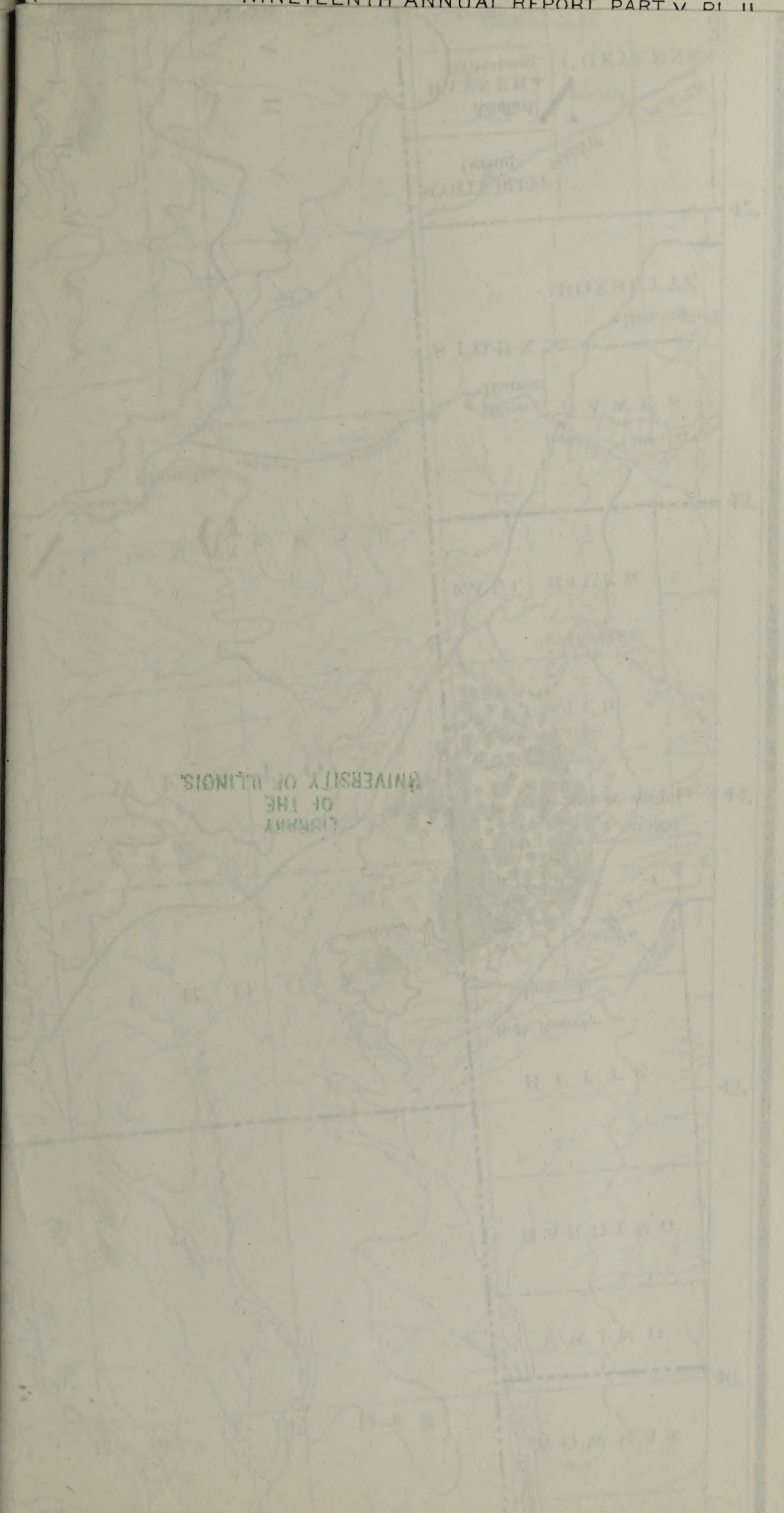

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MAP OF THE CORDILLERAN REGION

SHOWING THE DISTRIBUTION OF

WOODS AND FORESTS

BY HENRY GANNETT

1898

Scale

40 0 40 80 MILES

LEGEND

WOODED AREAS

FOREST AREAS

JULIUS BIEN & CO. LITH. N.Y.

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MAP OF WESTERN WASHINGTON

SHOWING CLASSIFICATION OF LANDS

BY JOHN W. RANKINE AND GEO. H. PLUMMER

1898.

Scale

10 5 0 10 20 MILES

LEGEND

AREA FROM WHICH TIMBER HAS BEEN CUT

BURNT AREA

TIMBERED AREA

TIMBERLESS AREA

SPARSELY TIMBERED OR UNKNOWN AREAS

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MAP OF WESTERN WASHINGTON SHOWING DENSITY OF MERCHANTABLE TIMBER

Scale

10 0 10 20 30 40 50 MILES

LEGEND

2,000 TO 5,000 FEET B.M. PER ACRE

5,000 TO 10,000 FEET B.M. PER ACRE

10,000 TO 25,000 FEET B.M. PER ACRE

25,000 FEET B.M. OR OVER

JULIUS BIEN & CO. LITH. N.Y.

PRELIMINARY MAP OF WESTERN OREGON, SHOWING THE DENSITY OF MERCHANTABLE TIMBER, EXPRESSED IN FEET, B. M.

JULIUS BIEN & CO. LITH. N.Y.

Scale

10 0 10 20 30 40 50 MILES

LEGEND

LESS THAN 5,000 FEET

5,000 TO 10,000 FEET

10,000 TO 25,000 FEET

OVER 25,000 FEET

NOT TIMBERED OR UNKNOWN

U.S. GEOLOGICAL SURVEY
CHARLES D. WALCOTT,
DIRECTOR

PLATE XIV

LAND CLASSIFICATION AND DENSITY OF STANDING TIMBER

SOUTH DAKOTA
BLACK HILLS FOREST RESERVE
RAPID QUADRANGLE

LEGEND

- Merchantable timber under 2,000 feet B.M. per acre
- Merchantable timber 2,000–5,000 feet B.M. per acre
- Merchantable timber 5,000–10,000 feet B.M. per acre
- Scattering timber
- Areas cut over

M E A D E

P E N N I N G T O N

T.5.N.
T.4.N.
T.3.N.
T.2.N.
T.1.N.
R.5.E.
R.6.E.

Fort Meade
Bear Butte
Spring Creek
Bear Butte Creek
Volunteer Creek
Tilford
Piedmont
Piedmont Butte
Elk Creek
Grashull
Blackhawk
Elder Creek
Bear Elder Creek
Green Mountain
Doc Dotie Ranch
Indian School
RAPID
Rapid Creek
Canyon Lake
Brennan
Pactola
Kane
McCurdy
Harvey
Kaufman
Reileys
Elliots
Young
Squier Creek
Pack
Trail Creek
Prairie Creek
Alkali Creek
Bear Gulch
Dispatch Gulch
Little Elk Creek
Jim Creek
Irsia Beaver
Bend
School

BLACK HILLS & FORT PIERRE RAILROAD
FREMONT, ELKHORN AND MISSOURI VALLEY RAILROAD

44° 30' 103° 30' 20' 10' 103° 44° 30'

A.H. Thompson, Geographer.
W.D. Johnson, Topographer in charge.
Triangulation by W.S. Post
Topography by R.A. Farmer.
Surveyed in 1891.

Scale 1/125,000
0 1 2 3 4 5 6 Miles
Contour interval 50 feet.

Henry Gannett, Geographer in charge.
H.S. Graves, Forester.

JULIUS BIEN & CO. LITH. N.Y.

U.S. GEOLOGICAL SURVEY
CHARLES D. WALCOTT,
DIRECTOR

PLATE XV

LAND CLASSIFICATION AND DENSITY OF STANDING TIMBER

SOUTH DAKOTA
BLACK HILLS FOREST RESERVE
DEADWOOD QUADRANGLE

LEGEND

- Merchantable timber under 2,000 feet B.M. per acre
- Merchantable timber 2,000-5,000 feet B.M. per acre
- Merchantable timber 5,000-10,000 feet B.M. per acre
- Scattering timber
- Areas cut over

L A W R E N C E

P E N N I N G T O N

D E A D W O O D

WITHDRAWN

RESERVE

1st Standard Parallel North

T.6.N. T.5.N. T.4.N. T.3.N. T.2.N. T.1.N.

R.1.E. R.2.E. R.3.E. R.4.E. R.5.E.

Normal School, Spearfish, Lookout Peak 4478, Spearfish Canyon, Crow Peak 3772, Centennial Park, Whitewood, Fremont, Elkhorn, Missouri Valley, Sturgis, Carbonate, Little Crow Peak, Spearfish Peak, False Bottom Creek, Richmond Hill, Garden, Deadwood, Gayville, Terraville, Pluma, Central City, Elk Mtn., Bald Mtn., Kirk, Galena, Terry Peak, Sugar Loaf Peak, Englewood, Woodville, Brownville, Fort Pierre, Terry, Elk Creek, Ruubles, Custer Peak, Dumont, Bull Dog Ranch, Nasby, Greenwood, Mt. Quaig, Crook Tower, Nahant, Gregory, Rochford, Mitchell Pilot Knob, Sankson, Jones, Merritt, Frazier, Mellick, Pinkerton, Ireland, Nicksman, Hughes, Saw Mill, Miers, Mystic, Lookout Mill, Lookout, Mountain, Iron Creek, Spearfish Creek, Little Spearfish Creek, Elkhorn and Missouri Valley Railroad, Fort Pierre and Black Hills Railroad

Scale 1/125,000
0 1 2 3 4 5 6 Miles
Contour interval 100 feet

A. H. Thompson, Geographer
E. M. Douglas, Topographer in charge.
Triangulation by E. M. Douglas
Topography by R. A. Farmer and C. H. Fitch,
Surveyed in 1891., 92.

Henry Gannett, Geographer in charge.
H. S. Graves, Forester.

JULIUS BIEN & CO. LITH. N.Y.

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DIRECTOR

PLATE XVI

LAND CLASSIFICATION AND DENSITY OF STANDING TIMBER

WYOMING-SOUTH DAKOTA
BLACK HILLS FOREST RESERVE
SUNDANCE QUADRANGLE

LEGEND

- Merchantable timber under 2,000 feet B.M. per acre
- Merchantable timber 2,000-5000 feet B.M. per acre
- Merchantable timber 5000-10,000 feet B.M. per acre
- Scattering timber

BEARLODGE MOUNTAINS
Warren Peaks
T.52.N.
Sundance Creek
Red Canyon
Dugout Gulch
Shepherd Gulch
CROOK CO.
LAWRENCE CO.
Beaver Creek
Bear Gulch
SUNDANCE
Green Mtn.
T.51.N.
Sundance Mtn.
3390
Manhattan
Grand Canyon
Spottedtail Gulch
Spearfish Creek
Welcome
Black Flat
T.50.N.
Black Buttes
Rattlesnake Canyon
BOUNDARY LINE
WYOMING
SOUTH DAKOTA
Bald Mountain
Inyankara Creek
T.49.N.
Inyankara Mtn.
6330
Cold Springs Canyon
Little Spearfish Creek
12TH Standard Parallel North
CROOK CO.
WESTON CO.
Mason Creek
Soldier Creek
LAWRENCE CO.
PENNINGTON CO.
T.48.N.
Indian Creek
Skull Creek
T.47.N.
Oil Creek
Beaver Creek
BURLINGTON & MISSOURI RIVER R.R.
R.63.W.
R.62.W.
R.61.W.
R.60.W.

Henry Gannett, Geographer
J. H. Renslawe, Topographer in charge.
Triangulation by W. S. Post
Topography by H. S. Wallace,
Surveyed in 1894.

Scale 1/125000
0 1 2 3 4 5 6 Miles
Contour interval 50 feet.

Henry Gannett, Geographer in charge.
H. S. Graves, Forester.

JULIUS BIEN & CO. LITH. N.Y.

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DIRECTOR

PLATE XVII

LAND CLASSIFICATION AND DENSITY OF STANDING TIMBER

SOUTH DAKOTA
BLACK HILLS FOREST RESERVE
HERMOSA QUADRANGLE

LEGEND

- Merchantable timber under 2,000 feet B. M. per acre
- Merchantable timber 2,000–5,000 feet B. M. per acre
- Merchantable timber 5,000–10,000 feet B. M. per acre
- Scattering timber
- Areas cut over
- Recent burns

BLACK HILLS BASE LINE

PENNINGTON

CUSTER

Rockerville
Hermosa
Fairburn
Spearfish Creek
Rapid Creek
Battle Creek
Beaver Creek
French Creek
Elk Creek
Box Elder Creek
Cheyenne River
South Fork of Cheyenne River
Missouri Valley Railroad
Fremont, Elkhorn and Missouri Valley Railroad
Deadwood
Spearfish
Sturgis
Sheep Mtn.
Baldwin
Wind Cave
Martin Valley
Glendale
Harney
Keystone
Tilford
Hayward
Ludlow
Piedmont
Rapid City
Black Hills Forest Reserve
Hermosa Quadrangle
T.1.S.
T.2.S.
T.3.S.
T.4.S.
R.5.E.
R.6.E.
1st Standard Parallel South
103°30'
20'
10'
103°44'
50'
40'
44°
43°30'

A. H. Thompson, Geographer.
E. M. Douglas, Topographer in charge.
Triangulation by E. M. Douglas
Topography by R. A. Farmer
Surveyed in 1891, 92.

Scale 1/125,000
0 1 2 3 4 5 6 Miles
Contour interval 100 feet.

Henry Gannett, Geographer in charge.
H. S. Graves, Forester.

JULIUS BIEN & CO. LITH. N.Y.

U. S. GEOLOGICAL SURVEY
CHARLES D. WALCOTT,
DIRECTOR

PLATE XVIII

LAND CLASSIFICATION AND DENSITY OF STANDING TIMBER

SOUTH DAKOTA
BLACK HILLS FOREST RESERVE
HARNEY PEAK QUADRANGLE

A. H. Thompson, Geographer.
E. M. Douglas, Topographer in charge
Triangulation by E. M. Douglas
Topography by R. A. Farmer and J. M. Bannon
Surveyed in 1893

Scale $\frac{1}{125,000}$

0 1 2 3 4 5 6 Miles

Contour interval 100 feet.

Henry Gannett, Geographer in charge.
H. S. Graves, Forester.

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108° 107° 50'

MAP
OF
BIGHORN FOREST RESERVE
WYOMING
SHOWING DISTRIBUTION OF WOODLAND

BY F. E. TOWN

1898

Scale

4 0 4 8 12 MILES

MONTANA WYOMING BOUNDARY LINE

SHEEP MT. DUNCOM MT. MEDICINE MT. BALD MT. LITTLE BALD MT. HUNT MT.

4th Standard Parallel North

5th Standard Parallel North

12th Standard Parallel North

Dayton 3916

Bighorn 4108

Banner

Ten Sleep 4513

BIGHORN MTS.

SHERIDAN CO. JOHNSON CO.

BOUNDARY LINE

BLACK BUTTE 9248

CLOUD PEAK 9195

FT. McKINNEY WOOD RESERVATION

Big Horn River · Little Tongue River · Tongue River · Prairie Dog Creek · Soldier Creek · Hazelton Creek · Bear Creek · Shell Creek · Paint Rock Creek · South Fork Paint Rock Creek · Hazelton Prairie · Dome Lake · Summit · Rock Creek · Clear Creek · Canyon Creek · Powder River · Beaver Creek · Little Goose Creek · Big Goose Creek · Eleven Mile Creek · Pass Creek · Canyon Park · Hominy Creek · Middle Fork · North Fork · Willow Creek · Trout Creek · Wagon Road from Big Horn to Ten Sleep · Pass Creek Lakes · Paint Rock Lakes · Ten Sleep Lakes

R 92 W R 91 W R 90 W R 89 W R 88 W R 87 W R 86 W R 85 W R 84 W R 83 W

T 57 N T 56 N T 55 N T 54 N T 53 N T 51 N T 50 N T 49 N T 48 N T 47 N

108° 50′ 40′ 30′ 20′ 10′ 107° 50′ 40′ 30′ 20′ 10′ 45° 40° 30° 20° 10° 44°

JULIUS BIEN & CO. LITH. N.Y.

TETON FOREST RESERVE AND SOUTHERN PART OF YELLOWSTONE PARK FOREST RESERVE

SHOWING LAND CLASSIFICATION AND WOODED AREAS

BY T. S. BRANDEGEE 1898

Scale

4 0 4 8 12 16 MILES

Contour interval 200 feet

LEGEND

AGRICULTURAL LAND — CONIFEROUS TIMBER — QUAKING ASPEN — BURNED AREAS

JULIUS BIEN & CO. LITH. N.Y.

MAP OF PRIEST RIVER FOREST RESERVE
SHOWING LAND CLASSIFICATION AND DENSITY OF MERCHANTABLE TIMBER

Scale
5 0 5 10 15 MILES

LEGEND

AGRICULTURAL LAND

BURNT AREA MAINLY RESTOCKING

FEET OF TIMBER PER ACRE, (B.M.)

2,000 TO 5,000

5,000 TO 10,000

10,000 TO 25,000

25,000 TO 50,000

CANADA
UNITED STATES BOUNDARY LINE

PRIEST RIVER FOREST RESERVE

BOUNDARY LINE

PRIEST RIVER

KOOTENAI RIVER

PRIEST LAKE

PEND OREILLE LAKE

PEND OREILLE RIVER

CABINET MOUNTAINS

WASHINGTON IDAHO FOREST RESERVE

BOISE MERIDIAN

FIRST GUIDE MERIDIAN WEST

13th Standard Parallel North

12th Standard Parallel North

Bonners Ferry 1766

Moravia 1841

Naples 2024

Elmira 2142

Colburn 2167

Kootenai

Sand Point 2112

Coolin

Priest River 2075

Laclede 2086

Newport 2123

Boundary Creek
Blue Joe Cr
Meadow Creek
Smith Creek
Cedar Cr
Hughes Creek
Gold Creek
Boulder Cr
Beaver Creek
Granite Creek
Trapper Creek
Caribou Creek
Lyon Head Creek
Lyon Creek
Fish Creek
Myrtle Creek
Deep Creek
Bath Creek
Spirit Lake
Bear Creek
Hunter Creek
Lamb Creek
Soldier Creek
Lost Creek
East Branch
Priest R.
Myrtle Creek
Great Northern Railroad
Pacific Railroad
Northern Pacific Railroad
Boise River

T 60 N
T 59 N
T 58 N
T 57 N
T 56 N

R 5 W
R 4 W
R 3 W
R 2 W
R 1 W

6800
6400
6200
6000
5800
2400
2434

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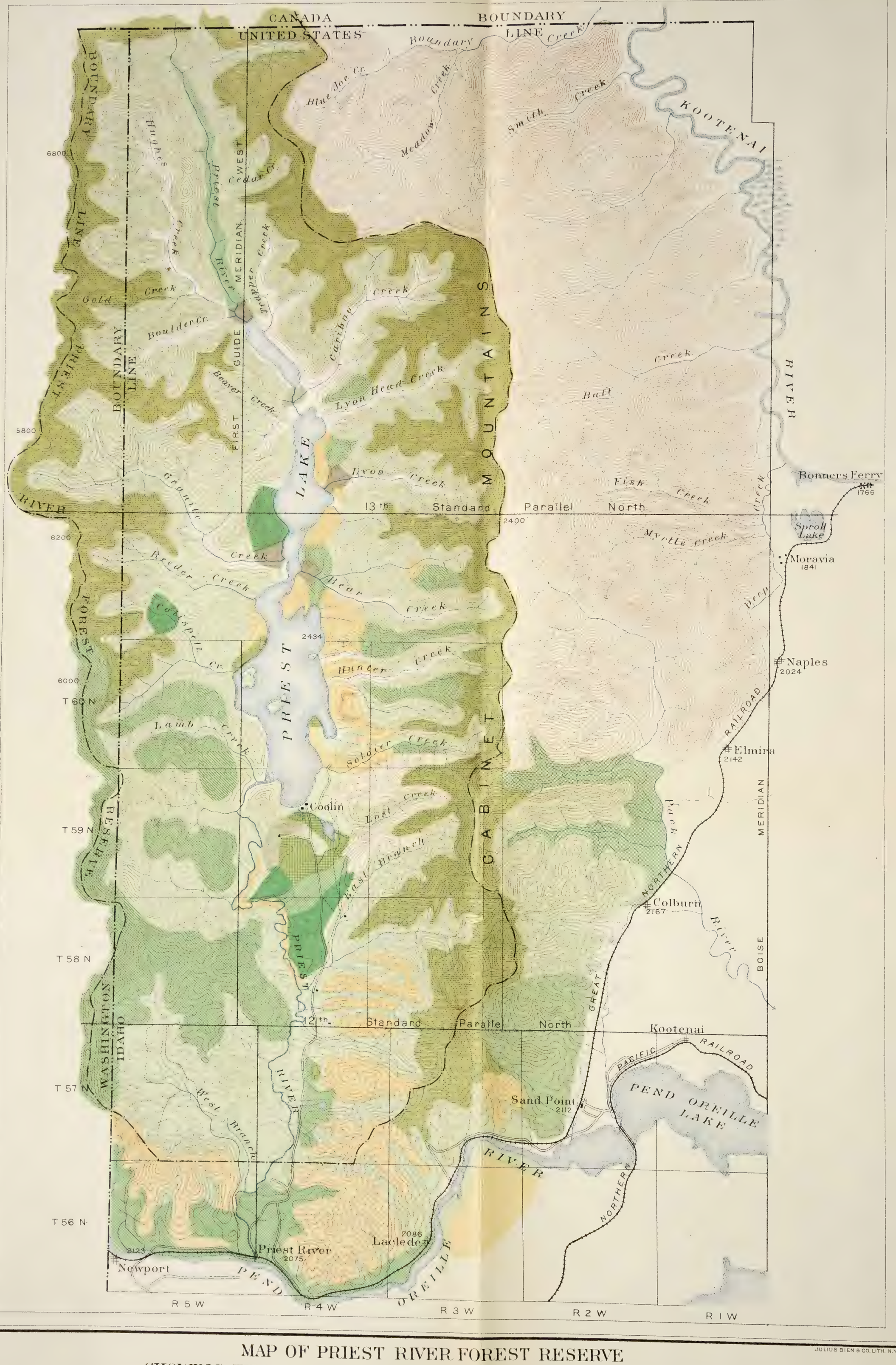

LEGEND

- YELLOW PINE AND HEMLOCK
- POPLAR
- WHITE PINE AND TAMARACK
- SUBALPINE FIR AND WHITE BARK PINE
- LODGEPOLE PINE BLACK PINE
- TAMARACK
- CEDAR, ENGELMANN SPRUCE, TAMARACK, WHITE PINE AND RED FIR
- RED FIR AND TAMARACK
- CEDAR
- MERTON HEMLOCK

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MAP OF PRIEST RIVER FOREST RESERVE
SHOWING THE DISTRIBUTION OF THE PRINCIPAL TIMBER SPECIES

Scale

5 0 5 10 15 MILES

MAP OF WASHINGTON FOREST RESERVE, SHOWING WOODED, BURNED AND RESTOCKED AREAS AND THE DENSITY OF MERCHANTABLE TIMBER, IN FEET B.M.

BY H. B. AYRES W. G. STEELE AND M. W. GORMAN 1898.

Scale

5 0 5 10 15 20 25 Miles

LEGEND

- Less than 2000 feet
- 2000 to 5000 feet
- 5000 to 10,000 feet
- 10,000 to 25,000 feet
- 25,000 to 50,000 feet
- 50,000 to 100,000 feet
- Burned Areas
- Burned and restored Areas

Contour interval 500 feet

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MAP OF WASHINGTON FOREST RESERVE, SHOWING DISTRIBUTION OF TIMBER SPECIES

Scale

5 0 5 10 15 20 25 Miles

LEGEND

- Red fir zone
- Hemlock, cedar, and white fir zone
- Alpine zone
- Lodgepole pine zone
- Yellow pine zone

Contour interval 500 feet

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